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TROPICAL AND SUBTROPICAL FRUIT INSECT INVESTIGATIONS

C. L. Marlatt, Entomologist in Charge

Mr. James Zetek, formerly Entomologist of the Canal Zone, has recently been placed in charge of the Panama project and will continue the investigations started by H. F. Dietz in 1918. Mr. Zetek is a graduate of the University of Illinois and for the past ten years has been engaged in entomological work in Panama and the Canal Zone. The Bureau is particularly fortunate in securing the services of Mr. Zetek who is so well versed in the entomological problems of the Canal Zone and surrounding country. He speaks Spanish fluently and has become thoroughly acclimated to the conditions which obtain in the Zone. His work will include the study of injurious tropical and subtropical insects such as the black fly and fruit flies. He will also make a study of the important fruit insects, and those passing through the canal from foreign countries, as a basis for any necessary quarantine action. He will therefore be carried part of the year on the rolls of the Federal Horticultural Board.

R. E. Nolen has been appointed field assistant in insect control and will continue the camphor thrips investigations at Satsuma, Fla., which were temporarily interrupted by the resignation of C. A. Bennett. This work is being conducted under the field direction of W. W. Yothers.

Dr. Wm. Mann has recently completed a report on his trip to Spanish Honduras, in which he lists the injurious insects of that locality. He collected several new species and discovered a new parasite which almost completely controls the coconut white fly in that country.

C. L. Marlatt recently conducted a hearing at Birmingham, Ala., on the subject of the Mexican bean weevil, at which State and Federal quarantine action was discussed and formulated. Later, in company with members of the Federal Horticultural Board, the pink bollworm situation in Texas was reviewed and certain amendments made to the quarantine affecting the movement of cotton lint from the El Paso district and the movement of lint from regulated districts in Louisiana. The *Thurberia* weevil situation in Arizona was then studied in cooperation with the State authorities for the purpose of determining the necessary quarantine action which the recent spread of this insect to cotton cultures demanded. It is understood that the district invaded by this insect near Tucson will hereafter be maintained by the State as a noncotton zone. The control of the date palm scales at Indio and elsewhere in the Imperial Valley of California was investigated and an agreement was reached to strengthen the control work with respect to this insect if funds could be secured. With such strengthening the outlook is extremely promising for the complete extermination of the *Parlatoria* scale. At Los Angeles the citrus station was visited and a cooperative plan of work was agreed upon between the station of this Bureau, now under the charge of A. D. Borden, and the educational, extension, and other work which is being undertaken by the California Fruit Growers' Exchange, in relation particularly to fumigation

under the direction of R. S. Woglum. The port quarantine work at San Francisco which is being carried on in cooperation with the State of California was given a day's inspection, and subsequent consultations were made over the cooperative features of this work at Sacramento with Commissioner Hacke and his assistants. Frederick Maskew, who for many years has been the head of the plant quarantine service of the State Department of Agriculture of California, and a collaborator of this Department for the enforcement of Federal quarantines at San Francisco and elsewhere in the State, has resigned, and his place has been filled by L. A. Strong, one of his principal assistants, who will continue in the cooperative work of this Department. Mr. Maskew's experience in port quarantine work placed him easily at the head of the experts of this country in such service, and it is hoped that after he has had the reasonable vacation to which his long service has fully entitled him, he can be reinstated in a cooperative capacity at least in the quarantine service of this Department. His work and that of the men whom he has trained has been of enormous benefit to the State of California and this country in the exclusion of important plant pests.

FOREST INSECT INVESTIGATIONS

A. D. Hopkins, Forest Entomologist in Charge

Dr. F. C. Craighead went to Madison, Wis., the latter part of October to arrange for some cooperative work in the control of insects injurious to forest products with the Forest Products Laboratory of the Forest Service.

S. A. Rohwer left on November 17 for Harrisburg and Philadelphia, Pa., to do some systematic work in the museums located in these cities and to compare types.

On November 15 Dr. A. D. Hopkins and M. A. Murray returned to Washington from their temporary field station located at Kanawha Station (Kanawha Farms) W. Va.

CEREAL AND FORAGE INSECT INVESTIGATIONS

W. R. Walton, Entomologist in Charge.

Page proof was recently read for a Farmers' Bulletin entitled "Spraying for the Alfalfa Weevil," by George I. Reeves and staff, which will be published as Farmers' Bulletin 1185 in the near future. This publication represents a portion of the results of seven years' work by Mr. Reeves and his staff in connection with this insect.

W. R. Thomson who is engaged in collecting the insect parasites of the European corn borer in southern Europe, reports encouraging progress in this work, and has already shipped a considerable amount of parasitic material to America during the past month, several hundred cocoons of an important hymenopterous parasite having already arrived at Boston in excellent condition. All possible precautions are being taken to secure only primary parasites and to prevent the introduction therewith of either injurious insects.

plant diseases. It is expected that excellent progress will be made in this work during the next few months.

LIBRARY

Mabel Colcord, Librarian

New Books

Argentine Republic. Legation U.S. Extirpacion de la Garrapata del ganado, de varia publicaciones oficinales de los Estados Unidos de Norte America. Tr. y arreglado en la Embajada, Washington. 30 p., illus. Washington, 1920.

Balfour-Browne, Frank. Keys to the orders of insects. 58 p., diagrs. Cambridge, 1920.

Croveri, Paola. Osservazioni sulla biologia della "Glossina palidipes" della Somalia Italiana e sulla trasmissione agli animali domestici della Tripanosi detta "Ghendi." Ann. d'Igiene, v. 29, p. 432-447. July 31, 1919.

Csiki, E. Scymaenidae. (Coleopterorum catalogus ... ed. a S. Schenkling, pt. 70). Berlin, 1919.

Demoll, Reinhard. Die sinnesorgane der arthropoden, ihre bau und ihre funktion. 245 p. illus. Braunschweig, Druck und Verlag F. Vieweg u. Sohn, 1917.
"Literature," p. 229-239.

Fryer, Percival J. Insect pests and fungus diseases of fruit and hops. A complete manual for growers. 728 p., illus., 24 plates (part colored). Cambridge, at the University Press, 1920.

Gahan, C. J. Furniture beetles, their life history and how to check or prevent the damage caused by the worm. 21 p. London, British Museum, 1920.

Geary, Henry. The bee-keepers' vade-mecum. 202 p., illus. London, Stanley Paul & Co., 1920.

Grouvelle, Antoine Henri. Memoires entomologiques, etudes sur les coleopteres. 2 vols. Paris, April, 1916, - May, 1919.

Harvey, Edmond Newton. The nature of animal light. 182 p. (Monographs on experimental biology) Philadelphia & London, J. B. Lippincott Co., 1920. Bibliography, p. 162-178.

Hill, Gerald F. Relationship of insects to parasitic disease in stock. Proc. Royal Soc. Victoria, v. 31 (New ser.), pt. 1, p. 11-107, pl. II-VIII Dec. 1918.

- Kieffer, J. J. Hymenoptera, Diapriidae. 697 p., illus. (Das Tierreich, lief 44). Berlin. Verlag von R. Friedländer und Sohn. October, 1916. "Litteratur-kurzungen." p. v-x.
- Lucas, William John. A monograph of the British Orthoptera. 264 p., illus. 25 plates. (The Ray Society). London, 1920.
Each plate accompanied by leaf with descriptive letterpress.
Includes bibliographies.
- Martini, E. Die anatomie der Oxyuris curvula. Parts I-II. Zeitschrift für wissenschaftliche Zool., v. 116, p. 137-534, pl. VI-XX
- Martini, E. Über stechnücken besonders deren europäischen arten und ihre bekämpfung... 267 p., illus., 4 pl. (Archiv für schrifts- und Tropenhygiene. Beihefte. Bd. 24, Beiheft 1) Leipzig, Verlag von Johann Ambrosius Barth, August, 1920.
Schriftenverzeichnis, p. 252-267.
- Merrill, George P. Contribution to a history of American state geological and natural history surveys. 549 p. (U.S. National Museum Bul. 109) Washington, Government Printing Office, 1920.
- Navarre (Province) Spain - Agricultura y ganaderia, Servicionde. Plagas del campo. Descripcio y apropiados medice de combatir la piral y la altisa y relacion de trabajos realizados en la provincia. Campana contra la langosta. 23 p., illus., esp. Pamplona, 1920.
At head of title: Servicio de agricultura y ganaderia de la diputacion foral y provincial de Navarre.
- Schoyen, T. H. Beretning om skadeinsekter og plantesygdommer i land og havebracket 1919, illus. Kristiania, Grondahl & Sons boktrykkeri, 1920.
- Thomson, J. Arthur. The system of animate nature. The Gifford lectures delivered in the University of St. Andrews in the year 1915 and 1916. 2 v. N.Y., Henry Holt and Co., 1920.
- Yerkes, Robert Mearns, The new world of science, its development during the war. 443 p., illus. N.Y., The Century Co., 1920.

TRUCK CROP INSECT INVESTIGATIONS

F. H. Chittenden, Entomologist in Charge

The following collaborators have been appointed recently in connection with the sweet-potato weevil work of this division in southern Mississippi, all of whom are under the direction of Prof. R. W. Harned of the Mississippi State Plant Board, at Agricultural College, Miss.: Robert P. Colmer, James M. Langston, George F. Riley, J. B. Swift, Clifford G. Wallace, Joseph G. Hester, Jackson V. Vernon, George B. Ray, George L. Lott, and Malcolm H. Mabry.

Roy E. Campbell, in charge of the truck-crop insect station at Alhambra, Calif., has submitted an interesting paper outlining the use of nicotine sulphate in a dust carrier against various species of truck crop insects. This method has been developed by the California Walnut Growers Association as a treatment for the control of the walnut aphids and has been successful in quantities up to 2 per cent nicotine. It has been found, however, that against the greater number of truck crop insects a considerably higher strength has been necessary to secure good control, under commercial practice from 5 to 7½ per cent of 40 percent nicotine being used. A hand-operated bellows duster can apply the dust effectively to two acres of full-grown casabas or muskmelons per day using about 50 pounds of dust per acre at a cost of about \$6. The nicotine at 6 per cent secured almost complete control of the cabbage aphids, even in colonies protected by curled leaves. Only 1 per cent more were killed by an increase to 8 per cent nicotine. The total cost per acre varies from \$6.15 to \$9.35 on cabbage nearly full grown. Against the onion thrips a killing of from 87 per cent to 97 per cent has been secured on a commercial scale at a cost of from \$6 to \$7 per acre. It is interesting to note that almost complete control of Diabrotica soror and D. trivittata, two destructive western cucumber beetles, was secured by a 4 per cent strength of nicotine sulphate in kaolin and lime. Many of the beetles were killed, while the plants were almost entirely freed from infestation. A number of other species were treated equally effectively.

BEE CULTURE

E. F. Phillips, Apiculturist in Charge

Geo. S. Demuth has resigned to accept the position of editor in chief of Gleanings in Bee Culture, Medina, Ohio, and has left Washington. As there are still certain parts of the work on the wintering bees not fully prepared for publication, Mr. Demuth will return to Washington during the winter to complete the manuscript.

E. W. Atkins has resigned to accept a position with the G. B. Lewis Company, manufacturers of beekeeping supplies.

Arrangements have been made for extension short courses in beekeeping at Ohio State University the week of January 21, and at Cornell University the week of February 7.

Dr. E. F. Phillips will attend the meeting of the Ontario Beekeepers' Association at Guelph, Ontario, December 1-3. At that time the new beekeeping building of the Ontario Agricultural College will be dedicated.

Dr. C. G. Miller, perhaps the best known beekeeper in the United States died recently at his home in Marengo, Ill., at the age of 89. He kept bees continuously for over sixty years and contributed largely to American Beekeeping literature.

DECIDUOUS FRUIT INSECT INVESTIGATIONS

A. L. Quaintance, Entomologist in Charge

Dr. A. L. Quaintance has just returned from an extended trip to California, where he visited several field stations and attended conferences at Sacramento and Fresno to discuss insect control matters of interest to the fruit industry of that State.

E. R. Van Leeuwen, in charge of the Bureau's laboratory at Cornelia, Ga., has been temporarily transferred to Ft. Valley, Ga., where he will assist in connection with clean-up work against the plum curculio in that region.

W. D. Whitcomb, who has been assisting in connection with apple insect investigations, with headquarters at Yakima, Wash., has been temporarily transferred to Ft. Valley, Ga., where he will also assist in the clean-up work against the plum curculio.

STORED PRODUCT INSECT INVESTIGATIONS

E. A. Back, Entomologist in Charge.

During August and September, Dr. E. A. Back made several trips to Gloversville, N. Y., to investigate outbreaks of Dermestes vulpinus in hide warehouses. This insect is causing much damage to hides and skins wherever they are stored and at the present high price of leather the losses are said by leather concerns to mount into the millions of dollars. Both fumigated and unfumigated hides are now going through the tanning process to determine what effect, if any, fumigation may have upon them. While previous observations indicate that no injury can be detected in the finished product, several firms have refused to employ fumigation in protecting rooms containing many millions of dollars worth of hides and skins, because the Department did not have on file authoritative statements regarding the effect upon hides of fumigation.

J. A. Hyslop has been correcting the page proof of his paper entitled "Genotypes of the Elaterid Beetles of the World," to appear in Volume 58 of the Proceedings of the National Museum.

J. C. Bridwell has been at work during the past few months upon the Bruchidae. The entire collection of Bruchidae in the National Museum has been rearranged in trays and all material sorted roughly according to species and tentatively distributed into natural groups. Because of the overcrowding of work on E. A. Schwarz and H. S. Barber, the Museum collection of Bruchidae has not been arranged since the days of Martin L. Linell. Eighty species from the United States were found represented out of the ninety-two species described. Arizona and Texas species are well represented on account of the work done in Texas in connection with boll weevil parasite investigations, and in Arizona by the work of Hubbard and Schwarz and by Schwarz and Barber. The collection, however, is weak in material showing the range of distribution of the species. The rich Neotropical fauna from Central Amer-

ica, Cuba, and South America is fairly well represented, but the collection needs strengthening in other faunas. The Bruchidae have been generally neglected and no general account of the species from the whole world has been published since that of Schoenherr, about 1830.

The strength of the collection in Bruchidae is due, even more than has been suggested above, to Mr. Schwarz and in later years to Mr. Barber. As in the case of all progressive work on the collections, the most cordial assistance has been rendered by them to Mr. Bridwell, in his work.

The work of plant introduction brings in much bruchid material of great interest, the seeds sent in by the field men being examined by the inspectors of the Federal Horticultural Board. Most of the bruchid material in the Museum from Asia and Africa and much of that from South America has been derived from this source. Mr. Bridwell has been determining the Bruchidae taken in inspection work in cooperation with W. S. Fisher of the Board.

---BUY W.S.S.---

The habits of regular saving and safe investment in government securities which have taken a firm hold in the governmental departments both in Washington and throughout the country will not be curtailed during the coming year because of lack of facilities. Secretary of the Treasury Houston has just announced that the Treasury is committed to the continuance and intensification of the Savings Movement of the Treasury and that the issue of savings securities will be continued throughout 1921.

Those securities will be augmented by two new issues according to his announcement. These will be a \$1 Savings Stamp and a registered Treasury Savings Certificate of the denomination of \$25.

In making the announcement, Secretary Houston said:

"Two new Treasury savings securities will be issued during the coming year, a \$1 Treasury Savings Stamp and a \$25 Treasury Savings Certificate. The \$1 stamp will be non-interest bearing, will be bright red in color, imprinted on a green tint, and will bear the portrait of Alexander Hamilton, the first Secretary of the Treasury. The \$25 certificate will be similar in design and terms to the \$100 and \$1,000 Treasury Savings Certificates, which will also be offered in 1921, to mature January 1, 1926. The new securities will supply a \$1 unit for saving and a registered Government security in the \$25 denomination, which can be conveniently purchased through the accumulation of the \$1 Treasury Savings Stamps. More important still, the new securities will complete a most attractive line of Government savings securities, the \$1 stamp and the \$25, \$100 and \$1,000 registered Treasury Savings Certificates, and thus place the Treasury Savings movement on a solid peace-time basis. The small denomination war-time securities, the \$5 War Savings Stamp, in a 1920 series, and the 25 cent Thrift Stamp, will also be offered during the coming year.

"Notwithstanding the reaction since the armistice from habits of saving and the natural tendency during the past year to invest funds in Liberty bonds

and Victory notes at current market prices, the demand for the savings securities has continued strong in many parts of the country. As the security markets become more settled, Treasury savings securities, bearing interest at 4 per cent compounded quarterly, exempt from State and local taxes and from the normal Federal income tax, and redeemable substantially on demand, should prove increasingly attractive, particularly to the multitude of small investors.

"With these considerations in mind, the Treasury is committed to the continued sale of Government savings securities, and feels that as time goes on continuous sales of savings securities over the counter, at post-offices and banks throughout the country, should play an increasingly important part in the current financing of the Government.

"To this end, the Treasury is also committed to the continuance of the work of the Savings Division, in Washington and in the several Federal Reserve districts. This organization endeavors to promote the popular purchase of Government Savings Securities; develops and protects the secondary market for Liberty bonds and Victory notes and other war issues of Government securities, and unites the efforts of all helpful agencies and movements, financial, industrial, educational, commercial and social, in a broad savings campaign to make permanent the habits of saving and investment in United States Government securities. Its work along these lines will be intensified in 1921.

"The Treasury Savings Movement has already demonstrated its usefulness by its efforts to promote sound economic conditions throughout the country and disseminate sound economic doctrine. In fact, the work of the Savings Division this year, not only in promoting the sale of Government Savings Securities and in strengthening the secondary market for Liberty bonds, but in establishing widespread habits of thrift and saving, has been frequently recognized as meeting a great national need. That recognition has been strikingly emphasized by the requests of great national organizations that the savings work be continued and by their offers of active cooperation in the movement.

"The American Federation of Labor at its last annual convention expressed itself as heartily in favor not only of the Government Savings Movement but also of Government Savings Securities.

"Nearly every fraternal organization of prominence in the United States has endorsed the Savings Movement and many have placed their funds in Government securities.

"Presidents of women's organizations have emphasized the need of the continuation of the Savings work among their membership in 1921.

"The work of the Savings Division has been splendidly successful in the schools, with the children and as well with the leaders of educational thought in America.

"In responding to those demands from great national organizations, the Savings Division will intensify during 1921 its campaign to spread broadcast the essential facts relative to wise saving and spending and investment and the continued development of new capital."

---BUY U.S.S.---